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Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 1: Overview

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Foreword

This second edition European Telecommunication Standard (ETS) has been produced by the Radio Equipment and Systems (RES) Technical Committee of the European Telecommunications Standards Institute (ETSI).

This ETS forms part 1 of a series of 9 laying down the arrangements for the Digital Enhanced Cordless Telecommunications (DECT) Common Interface (CI), and provides an overview of the whole ETS.

Part 1: "Overview".

Part 2 "Physical layer (PHL)".

Part 3 "Medium Access Control (MAC) layer".

Part 4 "Data Link Control (DLC) layer".

Part 5: "Network (NWK) layer".

Part 6: "Identities and addressing".

Part 7: "Security features".

Part 8: "Speech coding and transmission".

Part 9: "Public Access Profile (PAP)".

The following aspects of this ETS are subject to controlled distribution:

a) DECT identities, as defined in ETS 300 175-6 [5];

b) DECT cryptographic algorithms.

The cryptographic algorithms specify the details of the DECT standard authentication algorithm and the DECT standard cipher.

These aspects are distributed on an individual basis. Further information and details of the current distribution procedures can be obtained from the ETSI Secretariat at the address on the first page of this ETS.

Further details of the DECT system may be found in ETR 015, ETR 043, and ETR 056 (see annex A).

Transposition dates	
Date of adoption of this ETS:	6 September 1996
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1 Scope

This second edition European Telecommunication Standard (ETS) gives an introduction and overview of the complete Digital Enhanced Cordless Telecommunications (DECT) Common Interface (CI).

This part contains an abstract of the other parts of the DECT standard together with a general description of:

- the objectives of this ETS;
- the DECT CI;
- the protocol architecture of DECT.

This part also provides an extensive vocabulary, in particular it contains the common definitions of all the technical terms used in different parts of this ETS.

2 Normative references

This ETS incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to, or revisions of, any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

[1] ETS 300 175-2 (1996): "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 2: Physical layer (PHL)".

[2] ETS 300 175-3 (1996): "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 3: Medium Access Control (MAC) layer".

[3] ETS 300 175-4 (1996): "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 4: Data Link Control (DLC) layer".

[4] ETS 300 175-5 (1996): "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 5: Network (NWK) layer".

[5] ETS 300 175-6 (1996): "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 6: Identities and addressing".

[6] ETS 300 175-7 (1996): "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 7: Security features".

[7] ETS 300 175-8 (1996): "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 8: Speech coding and transmission".

[8] ETS 300 175-9 (1996): "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 9: Public Access Profile (PAP)".

[9] I-ETS 300 176: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT); Approval test specification".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of this ETS, the following definitions apply:

antenna diversity: Diversity implies that the Radio Fixed Part (RFP) for each bearer independently can select different antenna properties such as gain, polarisation, coverage patterns, and other features that may effect the practical coverage. A typical example is space diversity, provided by two vertically polarised antennas separated by 10 - 20 cm.

attach: The process whereby a Portable Part (PP) within the coverage area of a Fixed Part (FP) to which it has access rights, notifies the FP that it is operative. The reverse process is detach, which reports the PP as inoperative.

NOTE 1: An operative PP is assumed to be ready to receive calls.

authentication (of a subscriber): The process whereby a DECT subscriber is positively verified to be a legitimate user of a particular FP.

NOTE 2: Authentication is generally performed at call set-up, but may also be done at any other time (e.g. during a call).

bearer: See Medium Access Control (MAC) bearer or bearer service.

bearer handover: The internal handover process provided by the MAC layer, whereby one MAC connection can modify its underlying bearers while maintaining the service provided to the Data Link Control (DLC) layer.

NOTE 3: Bearer handover is slot based.

bearer service: A type of telecommunication service that provides a defined capability for the transmission of signals between user-network interfaces.

NOTE 4: The DECT user-network interface corresponds to the top of the DECT network layer (layer 3).

broadcast: A simplex point-to-multipoint mode of transmission.

NOTE 5: The transmitter may disregard the presence or absence of receivers.

C-plane: The control plane of the DECT protocol stacks, which contains all of the internal DECT protocol control, but may also include some external user information.

NOTE 6: The C-plane stack always contains protocol entities up to and including the network layer.

call: All of the Network (NWK) layer processes involved in one NWK layer peer-to-peer association.

NOTE 7: Call may sometimes be used to refer to processes of all layers, since lower layer processes are implicitly required.

cell: The domain served by a single antenna(e) system (including a leaky feeder) of one FP.

NOTE 8: A cell may include more than one source of radiated Radio Frequency (RF) energy (i.e. more than one radio end point).

Central Control Fixed Part (CCFP): A physical grouping that contains the central elements of a FP. A FP contains a maximum of one CCFP.

NOTE 9: A CCFP controls one or more RFPs.

centrex: An implementation of a private telecommunication network exchange that is not located on the premises of the private network operator. It may be co-located with, or physically a part of a public exchange.

channel: See physical channel.

cluster: A logical grouping of one or more cells between which bearer handover is possible. A Cluster Control Function (CCF) controls one cluster.

NOTE 10: Internal handover to a cell which is not part of the same cluster can only be done by connection handover.

connection: See "MAC connection".

connection handover: The internal handover process provided by the DLC layer, whereby one set of DLC entities (C-plane and U-plane) can re-route data from one MAC connection to a second new MAC connection, while maintaining the service provided to the NWK layer.

NOTE 11: Connection handover is DLC frame based.

Connectionless mode (C/L): A transmission mode that transfers one packet (one self contained unit) of data from one source point to one (or more) destination points in a single phase.

NOTE 12: Connectionless transmissions require the peer-to-peer associations to be prearranged, and the transmission is unacknowledged at that layer.

Connection Oriented mode (C/O): A transmission mode that transfers data from one source point to one or more destination points using a protocol based on three phases: "Set-up", "Data transfer" and "Release".

NOTE 13: C/O mode requires no prearranged associations between peer entities (unlike C/L mode).

Cordless Radio Fixed Part (CRFP): A Wireless Relay Station (WRS) that provides independent bearer control to a PT and FT for relayed connections.

coverage area: The area over which reliable communication can be established and maintained.

DECT Network (DNW): A network that uses the DECT air interface to interconnect a local network to one or more portable applications. The logical boundaries of the DECT network are defined to be at the top of the DECT NWK layer.

NOTE 14: A DNW is a logical grouping that contains one or more Fixed radio Terminations (FTs) plus their associated Portable radio Termination (PT). The boundaries of the DECT network are not physical boundaries.

DLC broadcast: A simplex "connectionless" mode of transmission from the DLC broadcast entity of one FT to the DLC broadcast entities in one or more PT.

NOTE 15: The transmitter may disregard the presence or absence of receivers.

DLC data link (DLC link): An association between two DLC layer entities. This can either be one C-plane association or one U-plane association.

NOTE 16: This is not the same as a MAC connection.

DLC frame: The format used to structure all messages that are exchanged between DLC layer peer entities.

NOTE 17: Different DLC frames are used in the C-plane and the U-plane, and there is more than one format of DLC frame in each plane.